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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/539,458	03/30/2000	Mark S. Chang	1346P/DA01028	8108

7590 02/19/2003

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EXAMINER	
PHAM, HOAI V	
ART UNIT	PAPER NUMBER
2814	

DATE MAILED: 02/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/539,458	CHANG ET AL.	
	Examiner	Art Unit	
	Hoai V Pham	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. In view of the appeal brief filed on 12/19/02, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1 and 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawata et al. [U.S. Pat. 6,437,394] newly cited.

Kawata et al. (figs. 1-4, cols 3-5) discloses a flash memory device comprising:

a plurality of gate stacks including a plurality of floating gates (203) and a plurality of control gates (205) disposed on a semiconductor substrate;

at least one component including a polysilicon layer (403) having a top surface;

a silicide (205) on the top surface of the polysilicon layer of the at least one component (col. 4, lines 11-15);

an insulating layer (404) covering the plurality of gate stacks, the at least one component and the silicide, the insulating layer having a plurality of contact holes (406, 407) therein, the plurality of contact holes being formed by etching the insulating layer to provide the plurality of contact holes, the insulating layer etching step using the silicide as an etch stop layer to ensure that the insulating etching step does not etch through the polysilicon layer and

a conductor (408) filling the plurality of contact holes;

wherein the silicide layer not resides between the plurality of floating gate and the plurality of control gates in the plurality of gate stacks.

With respect to claim 6, Kawata et al. discloses that the plurality of gate stacks further include a plurality of spacers (see figure 4).

With respect to claims 4, 5 and 6, the process limitation in claims 1, 4-6 (oxide-nitride-oxide layer is removed prior to formation of the silicide; removed during a second polysilicon layer etching step or removed after formation of the plurality of spacers.) do not carry weight in a claim drawn to structure. *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985). In addition, a "product by process" limitation is directed to the product per se, no matter how actually made, in re Hirao, 190 USPQ 15 and 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90; and *In re Marosi et al.*, 218 USPQ 289; all of which made clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product by a new method is not patentable as a product, whether claimed in "product by process" claims or not.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawata et al. [U.S. Pat. 6,437,394] newly cited, as applied to claims 1, 4-6 above, and further in view of Nariani [U. S. Pat. 5,470,775] previously cited.

Kawata et al. discloses all the limitation as claimed above except: the silicide layer includes a titanium silicide or a cobalt silicide. However, Nariani shows that the silicide layer (27) can be a titanium silicide or cobalt silicide (see col. 2, lines 59-67). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select titanium silicide or cobalt silicide as taught by Nariani into the device of Kawata et al. so as to use it as an etch stop layer. Note that: selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in Sinclair & Carroll Co., Inc. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawata et al. [U.S. Pat. 6,437,394] newly cited, as applied to claims 1, 4-6 above, and further in view of Diorio et al. [U. S. Pat. 5,990,512] newly cited.

Kawata et al. discloses all the limitation as claimed above except: the at least component being located on a field oxide region. However, Diorio et al. shows that the at least component (24) being located on the field oxide region (26) (see fig. 6B).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the component on the field oxide region as taught by Diorio et al. into the device of Kawata et al. for providing a channel stop to adjust the transistor's threshold voltage.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai V Pham whose telephone number is 703-308-6173. The examiner can normally be reached on 6:30A.M. - 6:00P.M..

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 703-308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

11. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

HP
Hoai Pham
February 11, 2003

SUPERVISORY PRIMARY EXAMINER
TECHNOLOGY CENTER 2800